EDISON

# KEFI Gold and Copper

## Hawiah developing rapidly behind Tulu Kapi

Hawiah updated resource

Metals & mining

**Since we published our last outlook note on KEFI in July 2021, the company has raised additional equity to deleverage its balance sheet and announced a turnaround in the working environment in Ethiopia, plus the take-off of its projects in Saudi Arabia. In particular, KEFI reports the civil war in Ethiopia effectively ceased in December with no clashes outside the northern part of the country (which is over 1,000km from Addis Ababa and over 1,300km from Tulu Kapi) since then. It also reports that, with the explicit support and agreement of the Ministry of Mines, the finance syndicate members are now all engaging to launch full construction programmes and the field teams are back on the ground, restarting tasks suspended in 2021, as well as completing development tasks to demonstrate safe conditions ahead of project launch.**

| Year end | Revenue (£m) | PBT* (£m) | EPS* (p) | DPS (p) | P/E (x) | Yield (%) |
|---|---|---|---|---|---|---|
| 12/19 | 0.0 | (3.5) | (0.6) | 0.0 | N/A | N/A |
| 12/20 | 0.0 | (2.8) | (0.2) | 0.0 | N/A | N/A |
| 12/21e | 0.0 | (1.8) | (0.1) | 0.0 | N/A | N/A |
| 12/22e | 0.0 | (8.3) | (0.2) | 0.0 | N/A | N/A |

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles and exceptional items.

## Hawiah resource up 29% or c two years of production

In January, KEFI reported a significant mineral resource upgrade at its Hawiah project in Saudi Arabia (2.2Moz AuE JORC 2012) and the reactivation of its mining licence application at Jibal Qutman (733koz JORC). Compared with three months ago (when it only had one project – Tulu Kapi – in which it had a beneficial interest of 1.2Moz, but whose tenure was being challenged by the Ethiopian Ministry), it now has three near-development projects poised for sequential development in which it has a beneficial interest of 2.1Moz (70% Ethiopia and 30% Saudi Arabia). Ministries in both countries are now reported to be overtly supportive of project development, to which end KEFI has also refined its sources and applications of funds at the project level for Tulu Kapi, ahead of the anticipated financial close and definitive project launch in mid-2022. It has also clarified its financing plan with Saudi Arabia showing over 90% of capital requirements being funded at the project level.

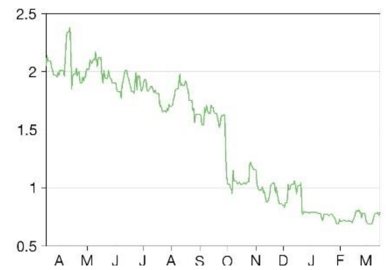
## Valuation: 3.4x current share price

We calculate that KEFI's trio of projects are capable of generating free cash flow of c £78.6m a year for seven years, from 2025 to 2031 (inclusive). This, in turn, drives average (maximum potential) dividends of 0.90p/share for the six years from 2026 to 2031 and values KEFI at 2.62p/share (cf 4.35p/share previously) fully diluted at the prevailing share price to account for a further assumed US$12.0m/£9.1m equity issue over the course of the next two years. This suggests a projected dividend-based value for KEFI of £77.0m or US$101.2m. The valuation reduces to 2.46p/share in the event that all convertible instruments involved in the funding are converted at our valuation of the shares in two to three years' time (see pages 14 and 17). At current metals' spot prices however (see Exhibit 5 cf Exhibit 1), it increases to 8.27p in FY27 plus c 1.21p/share for Guji-Komto.

**17 March 2022**

| | |
|---|---|
| **Price** | **0.761p** |
| **Market cap** | **£22m** |
| | US$1.3139/£ |
| Net debt (£m) end-June 2021 | 1.3 |
| Shares in issue | 2,939.1m |
| Free float | 94.8% |
| Code | KEFI |
| Primary exchange | AIM |
| Secondary exchange | N/A |

### Share price performance




| % | 1m | 3m | 12m |
|---|---|---|---|
| Abs | 7.1 | (22.1) | (60.5) |
| Rel (local) | 11.8 | (21.2) | (62.4) |
| 52-week high/low | | 2.38p | 0.69p |

### Business description

KEFI Gold and Copper is an exploration and development company focused on gold and copper deposits in the highly prospective Arabian-Nubian Shield – principally the Tulu Kapi project in Ethiopia, as well as the Hawiah copper and gold and Jibal Qutman gold projects in Saudi Arabia.

### Next events

| | |
|---|---|
| Hawiah PFS | FY22 |
| Tulu Kapi launch | Mid-2022 |
| Jibal Qutman mining licence | FY22 |
| Hawiah & Al Godeyer drilling results | FY22 |
| Tulu Kapi commissioning | Late FY23 |

### Analyst


Lord Ashbourne (formerly Charles Gibson) +44 (0)20 3077 5724

mining@edisongroup.com

Edison profile page


***KEFI Gold and Copper is a research client of Edison Investment Research Limited***

# Investment summary

## Company description: Specialist Arabian-Nubian Shield miner

KEFI Gold and Copper is a gold junior that specialises in discovery and acquisition on either side of the Arabian-Nubian Shield (ANS), which is the source of some of humankind's earliest known mining activities, including the Mahd adh Dhahab ('Cradle of Gold') mine in Saudi Arabia. Currently, KEFI's flagship Tulu Kapi project (1.7Moz in resources) is Ethiopia's only 'ready-to-start' industrial mining project, located away from the Tigray region and in a country on a continent that has been among the least affected by COVID-19. It also has 30% interests in discoveries in Saudi Arabia, namely Hawiah and Jibal Qutman (together 2.9Moz AuE on a 100% basis cf 2.3Moz previously). Both have significant potential for resource expansion.

## Valuation: 2.62p/share plus serious metals price gearing

In contrast to our previous valuations of KEFI, with greater clarity on the timing and funding of Jibal Qutman and Hawiah, we have now brought these two projects (accounted for as associates with a diluted KEFI interest of 30%) into our forecasts for the KEFI group as a whole. On this basis, we calculate that KEFI's trio of near- and medium-term development projects are capable of generating free cash flow of c £78.6m per year from 2025 to 2031 (inclusive). With average (maximum potential) dividends of 0.90p/share (cf 1.94p/share previously owing to additional dilution) for the six years from 2026 to 2031 inclusive (after deduction of a 30% minority interest), this implies a valuation for KEFI of 2.62p/share (cf 4.35p/share previously) when discounted back to FY22 at a rate of 10% per year. This valuation then rises to a maximum of 3.84p/share in FY26 on the cusp of the company's maiden dividend.

## Sensitivities: Base case valuation +113.7% at spot metals prices

Quantitatively, Edison's valuation of KEFI continues to be based on unchanged (real) gold price assumptions as follows:

**Exhibit 1: Edison real terms gold price forecasts, by year**

| Year | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|
| Gold price (US$/oz) | 1,749 | 1,681 | 1,617 | 1,554 | 1,524 |

Source: Edison Investment Research

At currently prevailing metals' prices however (see Exhibit 5), our 'base case' valuation of KEFI rises by 113.7%, from 2.62p/share to 5.60p/share, in which case we calculate that an investor buying KEFI shares on 1 January 2022 at a price of 0.761p would earn an internal rate of return of 42.7% over 13 years to 2034 in sterling terms. Finally, we calculate that US$27m in charges and loans converted into equity at Edison's valuation of KEFI's shares in two to three years' time (at prices of 2.89p and 3.18p, respectively, would dilute our 'base case' valuation by just 6.1%, to 2.46p/share. Qualitatively, KEFI is exposed to sovereign and political risks associated with Ethiopia as well as geological, metallurgical, engineering, financing (current funding requirement of c US$302m) and management risks.

## Financials: Future equity may be provided by existing warrants

KEFI had £1.3m in net debt on its balance sheet as at 30 June 2021. Since that date, it has raised £6.4m in equity and we estimate that it will raise an additional US$12.0m/£9.1m (which may be 69% achieved by the exercising of warrants issued in December and January over the course of the next two years as its projects further growth in resources and as it advances its development pipeline, albeit at a strike price of 1.6p cf a prevailing share price of 0.761p). Otherwise, it plans to finance its estimated US$301.0m capex funding requirement principally via debt of US$200m, project-level equity of US$39m (excluding c US$70m in equity already invested), debt convertible into equity of US$47m and parent company level equity of US$16m (of which US$9m is in the form of pre-commercial production internal cash generation). On this basis, we forecast a maximum (group) net debt funding requirement overall of £188.1m or US$247.2m in FY24 (cf £142.0m, or US$196.8m in FY22 previously). Within this context, we note that, in Saudi Arabia, KEFI's partner, which funds 70% of all G&M's equity requirements, is the Al Rashid family – one of the world's wealthiest families. At the same time, the Saudi sovereign wealth fund's Saudi Investment Development Fund has publicly stated its priority to provide up to 75% project debt for new mine developments in the Kingdom. Accordingly, KEFI's equity share of the development requirements for Hawiah and Jibal Qutman is just 7.5% (30% of 25%) of capital expenditure of US$199m (US$160m plus US$39m) – ie just US$14.9m – to be funded after Tulu Kapi starts up. Note that Tulu Kapi is projected by KEFI to accumulate a cash balance of US$90m (KEFI's share after expedited debt repayments at today's gold prices) in the first two years of operation. All this cash flow should then be available for dividends to shareholders because KEFI is being financed in such a way that the parent company is debt free, with subsidiaries directly servicing senior and mezzanine debt. KEFI also has special exemption from exchange controls and has agreed a London clearing account controlled by its TKGM operating subsidiary. As such, dividends from as early as FY26 should be possible.

## Recent developments: Peace descending

Since our last Outlook note on KEFI in July 2021, the company has raised additional equity capital as well as announcing a mineral resource update at its Hawiah copper and gold project in Saudi Arabia. It has also refined the final details of its sources and applications of funds ahead of the final financial close and definitive launch of the Tulu Kapi project later in H122. In the meantime, KEFI reports that the civil war in Ethiopia is now effectively over and that it has not seen any clashes outside the northern parts of the country over 1,000km from the capital, Addis Ababa, and over 1,300km from Tulu Kapi, since December. As a result, the country's state of emergency has been lifted and policing operations are being conducted in the areas around Tulu Kapi as well as other mining projects, reflecting the government's prioritisation of the protection of the emerging minerals sector. In the relative calm that has followed, KEFI's field teams have recommenced development activities that were suspended in 2021, including the preparation of new host lands for resettling households and the preparation of accommodation facilities for construction personnel. Consequently, KEFI has agreed with the government and its finance syndicate to plan for closure of the full project financing package in mid-2022.

## Equity raising

### Warrants could provide majority of equity funding required at PLC level

On 21 December, KEFI announced the raising of £6.4m via the placing of 786.2m shares, which was completed in January 2022. The placing was effected in two component parts, denoted the 'firm placing' and the 'conditional placing', with the former involving the issue of 414.4m shares to raise £0.7m in cash (gross) and settle £2.6m in liabilities and the latter involving the issue of 371.8m shares to settle £3.1m in liabilities. The weighted average issue price of the shares was very fractionally above 0.8p.

As a result of the placing, the number of KEFI's shares in issue has risen by 36.5%, to 2,939.1m shares. In addition, half a warrant was issued for every placing share issued, which confers upon the holder the right to subscribe for one further ordinary share at an exercise price of 1.6p (ie a total of 393.1m warrants issued in total). Readers should note that the exercise of all of the warrants would result in a total consideration of £6.3m, which could be sufficient to meet the majority of KEFI's equity funding needs at the PLC level to progress its three advanced development projects in Ethiopia and Saudi Arabia over the course of the next three years. The warrants will become exercisable if the on-market price of KEFI's shares closes at or above 2.4p (ie a 50% premium above the exercise price) for five consecutive days. Otherwise, the warrants will expire in two years' time. Any proceeds from the exercise of the warrants is intended, at least in part, to contribute to the financing of the Tulu Kapi project.

## Take-off in Saudi Arabia after regulatory overhaul

The acceleration of KEFI's ambitions in Saudi Arabia comes as a result of three main developments:

- The uplift in its resource at Hawiah, which has increased by 29% to 24.9Mt at a grade of 1.71% copper equivalent, containing 411kt CuE, or 2.2Moz AuE and now supporting an estimated nine-year production life with 47% of its resource upgraded into the indicated category for reserve determination and still open along strike and down plunge.
- The adjacent Al Godeyer licences (which are 12km to the west of, and which are regarded as a direct geological analogue to, Hawiah), having now been granted to KEFI, where trenching is well advanced ahead of planned drilling in 2022.
- Reports that Jibal Qutman (where KEFI has delineated a resource of 733koz and where a pre-feasibility study on a heap leach was completed in 2015) is now likely to receive a mining licence in FY22.

KEFI's key 2022 objectives in Saudi Arabia are now to complete the Hawiah copper-gold project pre-feasibility study (PFS), update Jibal Qutman's development plans and to start drilling Al Godeyer (which returned over 7g/t Au from surface sampling and demonstrates a surface gossan extending over 1.7km and where early field results indicate significant volcanogenic massive sulphides (VMS) potential, similar to the copper-gold deposits at Hawiah) in Q222. VMS deposits typically form in clusters and Al Godeyer is only one of the many VMS prospects in KEFI's pipeline of exploration targets. In this case however, success at Al Godeyer could potentially add substantial value to the development of the Hawiah project.

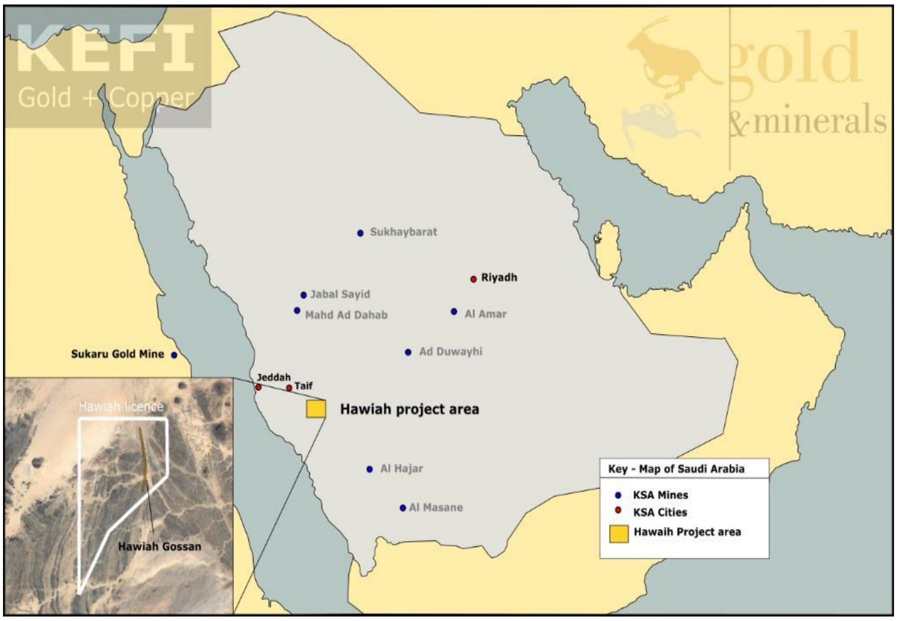
### Hawiah mineral resource update

Hawiah reported an updated mineral resource estimate on 6 January 2022. Compared with its 2020 maiden mineral resource, the update represented a 29.0% increase in tonnage at a slightly higher grade to result in an approximate one-third increase in contained metal, capable of supporting production for an additional two years relative to its September 2020 preliminary economic assessment (Edison estimate). Including by-products, the resource is the equivalent of 24.9Mt at a grade of 1.71% copper equivalent (cf 1.57% CuE previously) containing 411kt CuE or 2.68g/t gold equivalent (cf 2.51g/t AuE previously) containing 2.2Moz AuE.

#### Background

The 95km$^2$ Hawiah exploration licence is located in the south-west of the Arabian Shield on the 120km Wadi Bidah Volcanogenic Mineral belt. The Wadi Bidah belt is almost three times as long as the Bisha belt in Eritrea (see Nevsun), hosts over 20 VMS occurrences and is almost unique among the world's VMS belts in that it remains, to all intents and purposes, unexplored.

**Exhibit 2: Hawiah location**




Source: KEFI Gold and Copper

## Hawiah updated mineral resource estimate

KEFI announced a maiden mineral resource at Hawiah on 19 August 2020 and a preliminary economic assessment (PEA) on the project on 22 September 2020. After a period of additional drilling, it then followed this up with an updated mineral resource estimate on 6 January 2022.

Relative to its 2020 maiden mineral resource, the update represented a 29.0% increase in tonnage at a slightly higher grade to result in an approximate one-third increase in contained metal, as shown in the table below:

**Exhibit 3: Hawiah* maiden mineral resource estimate**

| Material type | Category | Tonnage (kt) | Cu (%) | Zn (%) | Au (g/t) | Ag (g/t) | Cu (kt) | Zn (kt) | Au (koz) | Ag (oz) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Updated** | | | | | | | | | | |
| Open pit | Indicated | 7.0 | 1.13 | 0.78 | 0.66 | 10.03 | 72 | 55 | 149 | 2,271 |
| Underground | Indicated | 3.9 | 0.83 | 1.00 | 0.61 | 9.89 | 32 | 39 | 76 | 1,230 |
| Sub-total | Indicated | 10.9 | 0.96 | 0.86 | 0.64 | 9.98 | 104 | 94 | 225 | 3,501 |
| | | | | | | | | | | |
| Open pit | Inferred | 1.4 | 0.43 | 0.41 | 1.17 | 10.14 | 6 | 6 | 52 | 446 |
| Underground | Inferred | 12.6 | 0.89 | 0.88 | 0.55 | 9.61 | 113 | 111 | 221 | 3,892 |
| Sub-total | Inferred | 14.0 | 0.85 | 0.83 | 0.61 | 9.67 | 118 | 116 | 273 | 4,338 |
| | | | | | | | | | | |
| Open pit | Total | 8.4 | 0.93 | 0.73 | 0.74 | 10.06 | 78 | 61 | 200 | 2,717 |
| Underground | Total | 16.5 | 0.88 | 0.90 | 0.56 | 9.66 | 145 | 149 | 297 | 5,122 |
| **Total** | **Total** | **24.9** | **0.90** | **0.85** | **0.62** | **9.81** | **223** | **210** | **497** | **7,839** |
| | | | | | | | | | | |
| **Initial** | | | | | | | | | | |
| Oxide, open pit | Inferred | 0.1 | 0.1 | 0.03 | 1.7 | 3.9 | 0.1 | 0.04 | 7 | 16 |
| Transition, underground | Inferred | 2.0 | 1.1 | 0.8 | 0.7 | 12.0 | 21 | 16 | 45 | 763 |
| Fresh, underground | Inferred | 17.2 | 0.9 | 0.8 | 0.5 | 10.1 | 147 | 141 | 297 | 5,595 |
| **Total** | **Inferred** | **19.3** | **0.9** | **0.8** | **0.6** | **10.3** | **168** | **157** | **349** | **6,373** |
| | | | | | | | | | | |
| **Difference (%)** | | +29.0 | +3.9 | +5.5 | +11.0 | -4.3 | +32.5 | +33.9 | +42.5 | +23.0 |

Source: Edison Investment Research, KEFI Gold and Copper. Note: *KEFI 30% beneficial interest; reported in accordance with the Australasian Code for the Reporting of Exploration Targets, Mineral Resources and Ore Reserves, The JORC Code, 2012 Edition.

To date, a total of 193 diamond holes have been drilled at Hawiah over 41,841m (an average of 217m per hole). Drill spacing on the Camp and Crossroads Lodes was approximately 50–60m within areas reporting to the 'indicated' classification of resources and 120–140m for areas reporting to the 'inferred' classification. At prevailing metal prices (US$9,904/t Cu, US$3,798/t Zn, US$1,914/oz Au and US$24.81/oz Ag), we calculate that the resource contains total metal to a value of US$4.2bn (cf US$2.8bn previously), or the equivalent of 419kt of contained copper (cf 302kt previously) at an average grade of 1.68% copper equivalent or 2.2Moz of contained gold (cf 1.6Moz previously) at an average grade of 2.71g/t gold equivalent.

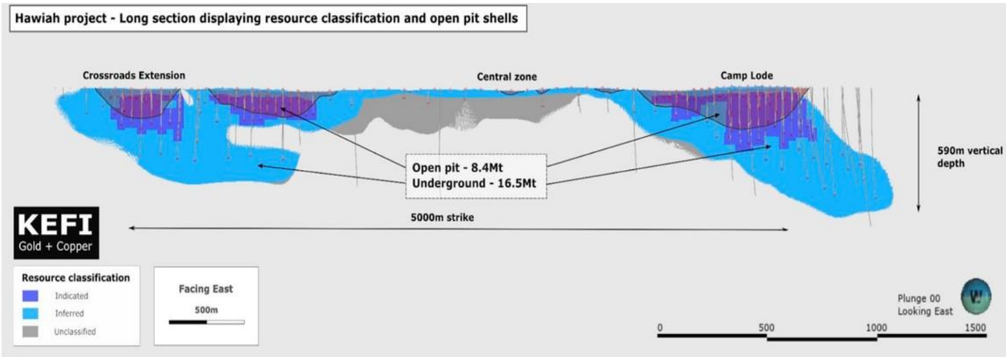
The entire deposit comprises three separate zones, denoted the Camp Lode, the Crossroads Lode and the Crossroads Extension Lode (see Exhibit 4), with the increase in Hawiah's overall resource in its update largely attributable to 1) expansion of the Camp Lode at depth and 2) expansion of the Crossroads Extension at depth. At the same time, KEFI confirmed that the VMS style of mineralisation is continuously present directly beneath 5.0km of gossanous ridgeline (cf 4.5km previously) and that it is the source of an extensive and exceptionally strong geophysical anomaly. As such, KEFI was successful in achieving the four main objectives of its drilling programme, which were:

- to define an open cut gold resource for early, low-cost mining;
- to update existing resources in key areas into the 'indicated' category for inclusion in Hawiah's ongoing PFS;
- to expand the known resource areas in order to increase the overall global tonnage; and
- to increase drilling density within the copper-rich Transition Zone in order to demonstrate grade continuity and allow for better evaluation of an open-pit mining scenario.

The massive sulphides intersected in its drill programme are reported to reflect a dominantly pyritic stratiform body containing a variable polymetallic blend of copper, zinc, gold and silver. Nevertheless, there remains considerable blue-sky potential. To date, the orebody has only been drilled to a vertical limit of 590m, but continues to remain open at depth. The down-dip continuation of the Camp Lode is of particular interest in this respect. As predicted by KEFI's geological model, the depth extension of the Camp Lode has an elevated average grade of 1.2%, making it the highest-grade area outside the copper enriched transition zones. Moreover, the final and deepest drillhole into this mineralisation (HWD 092) intersected 5.45m (estimated true width 4.4m) at a grade of approximately 1.6% Cu, which had the effect, among other things, of extending the total plunging strike length of mineralisation to 1.2km from surface at an average true width of 7m. Two of the other deepest drill holes (HWD_005 and HWD_059) have registered grades of 1.27% copper over a true width of 9m and 1.55% copper over a true width of 8.7m, respectively, and, if intersected in line with expectations, would extend mineralisation to a depth of c 800m and may indicate that resources are nearing the source (vent) of the VMS, where higher grades and thicker massive sulphides and stockwork-style mineralisation may typically be found. Geochemical analysis and volcaniclastic textures within the lodes have also indicated increasing proximity with depth to a potential primary feeder source. The Crossroads Extension Lode (0.7km long with an average width of 5m), which has been explored to a maximum vertical depth of 390m (where 5.4m of massive sulphide was intersected), similarly remains open at depth.

At the same time, drilling below the Central Zone (the 1,700m long area between the Crossroads and Camp lodes) has intersected mineralisation down to a depth of 580m and confirmed its resource potential, as indicated by a strong induced polarisation (IP) anomaly. However, drilling within this area is limited and yet to be fully defined, with the result that only the oxide portions of this area have so far qualified for inclusion in the 'inferred' category of resources. Finally, massive sulphides are reported to have been intersected in a drill hole 150m to the north of the Hawiah ridgeline, confirming that the mineralised horizon continues at depth even beyond the northern surface exposure in the 'Crossroads extension area'.

**Exhibit 4: Hawiah project drilling and exploration**




Source: KEFI Gold and Copper

Similar potential exists in the upper levels of the deposit, where the gossan portion of the mineralised zone is challenging to drill by virtue of the weathering patterns and the numerous cavity zones encountered. However, the French geological survey, Bureau de Recherches Géologique et Minières (BRGM), drilled VMS gossans elsewhere in the 120km long Wadi Bidah metallogenic belt (WMMB) in the 1980s, which resulted in the delineation of a resource of 1.2Mt at a grade of 6.4g/t, containing 254koz gold, and management confirms that this oxidised portion of the deposit, which has demonstrated high levels of gold mineralisation, will also be further investigated.

Based on published literature, KEFI management believes that the Hawiah deposit is analogous to (albeit already bigger than) the Al Masane polymetallic VMS mine, which was the first mine in Saudi Arabia to export copper and zinc concentrates and has reported resources of 8.5Mt at grades of 1.0% copper, 5.0% zinc, 1.0g/t gold and 38g/t silver, and a similar metal composition within similar structural and geological settings to Hawiah. Note that the discovery of the stockwork zone that fed the structure now being drilled at Hawiah could also represent a potentially much larger bulk-mineable target analogous to the Jabal Sayid mine operated by Barrick (to the north of Hawiah).

In terms of the value of the in-situ resource itself, we estimate that the update represents an increase in value of c US$8.0m to US$11.8m on a 100% basis (see our report Gold stars and black holes, published in January 2019), or US$2.4m to US$3.6m (or 0.12 US cents per KEFI share, undiluted) on an attributable basis (ie reflecting KEFI's current 30% interest in the project). Of particular note however is the upgrade of a substantial portion of the resource into the indicated category, which now accounts for 44% of the total (cf 0% previously). Of more significance, it takes the deposit closer to supporting the extended 17-year scenario in KEFI's PEA of the deposit (cf the seven-year 'base case' scenario) and of therefore increasing the $NPV_{8\%}$ of the project from US$96m (for the seven-year 'base case') to US$362m for the extended mine life scenario (on a 100% basis – see Exhibits 6 and 7, below).

## Hawiah PEA

The resource reported by KEFI in Exhibit 3 is the equivalent of 24.9Mt at a grade of 1.68% copper equivalent (cf 1.57% CuE previously) or 2.71g/t gold equivalent (cf 2.51g/t AuE previously), such that each tonne of ore contains an estimated US$167 worth of combined metals at spot prices (see Exhibit 5) cf US$144 previously.

On 22 September 2020, KEFI announced the results of a PEA at Hawiah. The PEA was conducted by the KEFI planning team, supported by internationally recognised specialists, including SRK, and included technical analysis, high-level assessments and trade-off studies to establish the likely key components of the mine's potential development. Among other things, these included:

- Underground mining using long-hole open stoping, using rib and sill pillars for support.

- Processing via two-stage flotation to produce separate copper and zinc concentrates, with a cyanide leach circuit to allow for the production of gold doré from the zinc concentrate and tailings stream.
- Tailings storage and required infrastructure.

The full details of the results of KEFI's PEA may be found in its announcement. It was also the subject of Edison's report entitled Rose gold published on 30 September 2020, and readers are directed towards this report for a fuller explanation regarding Edison's approach to calculating a value for the project and its assumptions in doing so. A brief comparison of the major differences between KEFI's original assumptions and Edison's updated assumptions in calculating a value for the project (including spot metals' prices) is as follows:

**Exhibit 5: Comparison of KEFI and Edison assumptions regarding Hawiah cf spot prices**

| | KEFI assumption | Edison assumption | Spot prices |
|---|---|---|---|
| **Metals prices** | | | |
| Copper price (US$/t) | 6,603 | *6,410 | 9,904 |
| Zinc price (US$/t) | 2,315 | *2,315 | 3,798 |
| Gold price (US$/oz) | 1,956 | *1,524 | 1,914 |
| Silver price (US$/oz) | 27.50 | *24.99 | 24.81 |
| **Other** | | | |
| Sustaining capital expenditure | US$46m | Seven years at US$8m pa = US$56m | N/A |

Source: KEFI Gold and Copper, Edison Investment Research. Note: *Long-term real prices.

Note that Edison's long-term prices remain unchanged relative to our last note.

In its PEA, KEFI considers a 'base case' scenario in which the mine operates at a throughput rate of 2.0Mtpa for seven years and an 'extended' scenario in which it operates for a further 10 years 'at the average grade of the Camp Lode below the 1070m RL elevation'. On the basis of these assumptions, the updated financial outcomes generated by Edison from its model compare with those generated by KEFI as shown in Exhibit 6. In addition, we have also shown equivalent outcomes in the event that the current spot prices of metals (see Exhibit 5) prevail over the entire course of the Hawiah mine life in real terms:

**Exhibit 6: KEFI versus Edison financial model outcomes**

| Extended mine life scenario | | | | | Scenario | Base case scenario | | | |
|---|---|---|---|---|---|---|---|---|---|
| KEFI | KEFI | Edison | Edison | Edison | Model | KEFI | Edison | Edison | Edison |
| *Spot | KEFI | KEFI | Edison | Spot | Assumptions | KEFI | KEFI | Edison | Spot |
| | | 2.0 | 2.0 | 2.0 | Ore processing rate (Mtpa) | 2.0 | 2.0 | 2.0 | 2.0 |
| | | 17 | 17 | 17 | Life of mine (years) | 7 | 7 | 7 | 7 |
| | | 78 | 78 | 78 | Average annual operating costs (US$m) | 79 | 78 | 78 | 78 |
| | | 155.5 | 142.6 | 218.0 | Average annual revenue (US$m) | 153 | 155.5 | 142.6 | 218.0 |
| | | 86 | 86 | 86 | Average annual all-in sustaining costs (US$m) | 85 | 86 | 86 | 86 |
| | | 69.5 | 56.6 | 132.0 | Annual steady-state pre-tax free cash flow (US$m) | 67 | 69.5 | 56.6 | 132.0 |
| **554 | **362 | **311.3 | 166.1 | 650.0 | Post-tax NPV (US$m) | **96 | **99.8 | 28.3 | 322.0 |
| | 28 | 26.6 | 21.5 | 49.8 | Post-tax IRR (%) | 22 | 20 | 13.7 | 46.7 |
| | | 222 | 222 | 222 | Pre-production capital expenditure (US$m) | 222 | 222 | 222 | 222 |
| 166 | 108.6 | 93.4 | 49.8 | 195.0 | 30% KEFI share of post-tax NPV (US$m) | 28.8 | 29.9 | 8.5 | 96.6 |
| 5.65 | 3.69 | 3.18 | 1.70 | 6.64 | Ditto (US cents per share, undiluted) | 0.88 | 1.02 | 0.29 | 3.29 |
| 4.30 | 2.81 | 2.42 | 1.29 | 5.05 | Ditto (pence per share, undiluted) | 0.75 | 0.78 | 0.22 | 2.50 |

Source: Edison Investment Research, KEFI Gold and Copper. Note: Per share amounts undiluted; *US$1,830/oz Au, US$9,750/t Cu, US$3,590/t Zn, US$23/oz Ag prices and US$1.35/£ forex used; **NPV calculation conducted at an 8% discount rate; otherwise, all other NPV's conducted at a 10% discount rate.

Several features of these outcomes are noteworthy:

- The similarity between the outputs of the KEFI model and the Edison model using KEFI assumptions for the 'base case' scenario, which confers confidence upon Edison's financial model relative to KEFI's.

- For the ‘extended mine life’ scenario, the difference between the net present value (NPV) of the KEFI model and the Edison model using KEFI assumptions is 14.0% (US$311.3m cf US$362m), which we regard as being an acceptable variance within the context of a PEA in which the operating and capital cost estimates are made to a ±50% level of accuracy.
- The material increases in the valuations of the project attained using spot prices compared with long-term prices.

In its PEA ‘base case scenario’, KEFI envisaged mining at a rate of 2.0Mt per annum at Hawiah for seven years, or 14.0Mt over the life of the operation – equivalent to 72.5% of the maiden resource reported the month before. Applying this percentage to the updated mineral resource would imply a mineable inventory of 18.0Mt or approximately nine years’ worth of mining at a rate of 2.0Mtpa – some, but not all of the way, to KEFI’s target of a 17-year mine life (the ‘extended mine life scenario’ in Exhibit 6, above). The results of the same analysis as above, adapted for a nine-year mine life (at both Edison long-term and also spot prices) are presented in the table below in addition to those already calculated:

**Exhibit 7: KEFI versus Edison financial model outcomes**

| Extended mine life scenario | | | | | Scenario | Base case scenario | | | | 9-yr life of mine | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KEFI | KEFI | Edison | Edison | Edison | Model | KEFI | Edison | Edison | Edison | Edison | Edison |
| *Spot | KEFI | KEFI | Edison | Spot | Assumptions | KEFI | KEFI | Edison | Spot | Edison | Spot |
| | | 2.0 | 2.0 | 2.0 | Ore processing rate (Mtpa) | 2.0 | 2.0 | 2.0 | 2.0 | **2.0** | **2.0** |
| | | 17 | 17 | 17 | Life of mine (years) | 7 | 7 | 7 | 7 | **9** | **9** |
| | | 78 | 78 | 78 | Average annual operating costs (US$m) | 79 | 78 | 78 | 78 | **78** | **78** |
| | | 155.5 | 142.6 | 218.0 | Average annual revenue (US$m) | 153 | 155.5 | 142.6 | 218.0 | **142.6** | **218.0** |
| | | 86 | 86 | 86 | Average annual all-in sustaining costs (US$m) | 85 | 86 | 86 | 86 | **86** | **86** |
| | | 69.5 | 56.6 | 132.0 | Annual steady-state pre-tax free cash flow (US$m) | 67 | 69.5 | 56.6 | 132.0 | **56.6** | **132.0** |
| **554 | **362 | **311.3 | 166.1 | 650.0 | Post-tax NPV (US$m) | **96 | **99.8 | 28.3 | 322.0 | **67.3** | **414.7** |
| | 28 | 26.6 | 21.5 | 49.8 | Post-tax IRR (%) | 22 | 20 | 13.7 | 46.7 | **17.3** | **48.6** |
| | | 222 | 222 | 222 | Pre-production capital expenditure (US$m) | 222 | 222 | 222 | 222 | **222** | **222** |
| 166 | 108.6 | 93.4 | 49.8 | 195.0 | 30% KEFI share of post-tax NPV (US$m) | 28.8 | 29.9 | 8.5 | 96.6 | **20.2** | **124.4** |
| 5.65 | 3.69 | 3.18 | 1.70 | 6.64 | Ditto (US cents per share, undiluted) | 0.88 | 1.02 | 0.29 | 3.29 | **0.69** | **4.23** |
| 4.30 | 2.81 | 2.42 | 1.29 | 5.05 | Ditto (pence per share, undiluted) | 0.75 | 0.78 | 0.22 | 2.50 | **0.52** | **3.22** |

Source: Edison Investment Research, KEFI Gold and Copper. Note: Per share amounts undiluted; *US$1,830/oz Au, US$9,750/t Cu, US$3,590/t Zn and US$23/oz Ag prices used; **NPV calculation conducted at an 8% discount rate; otherwise, all other NPV’s conducted at a 10% discount rate.

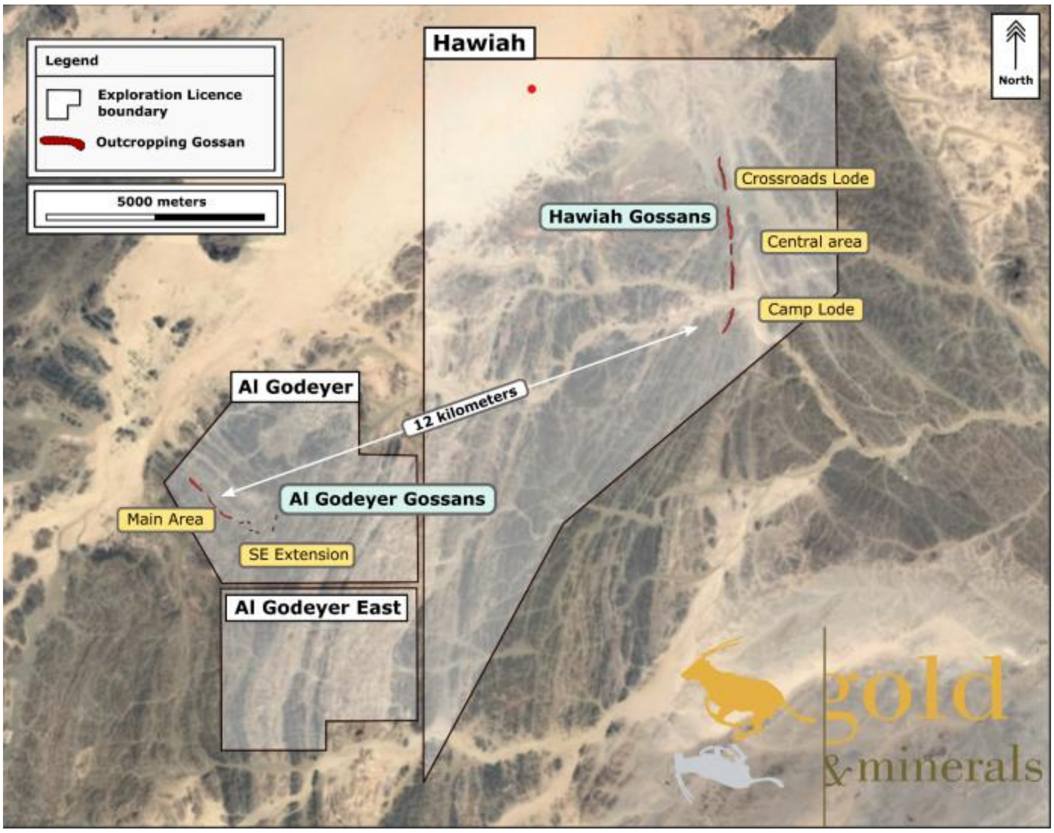
In consequence and owing to the tabular and continuous nature of the mineralisation, KEFI anticipates that Hawiah can be advanced to a development decision quickly and at relatively low cost. In particular, if the resource can be expanded to make the ‘extended mine life scenario’ a reality, then KEFI expects that 75% of the project funding could be eligible for preferential debt finance via Saudi Arabian incentivisation schemes, thereby increasing the project’s (leveraged) post-tax internal rate of return to in excess of 50%.

## Next steps at Hawiah

Following completion of the PEA and successful subsequent drilling, KEFI has commenced work on a PFS, which is scheduled for completion later this year, followed by a mining licence application and a potential start to development in 2023. In the meantime, it has renewed its exploration efforts, with the early phases of exploration in 2022 focusing on resource definition within the Central Zone of the orebody (see Exhibit 4), where only limited drilling has taken place to date, with a view to increasing the size of the overall mineral resource. At the same time, drilling programmes have started to increase the drilling density in the areas of the inferred resource that report to the open-pit scenario (ie predominantly inferred oxide resources) with a view to upgrading them into the ‘indicated’ category, thereby justifying mine planning and the estimation of a maiden ore reserve and aiding in the open-pit study as part of the project PFS. Note that the successful incorporation of an initial open-pit scenario into the PFS holds out the possibility of a lower initial capex requirement for the project, as does the potential to develop the copper and zinc concentrator after the start of mining and gold processing operations. So far, such a possibility has not been considered in our analyses of Hawiah. However, KEFI management estimates that both initiatives could, between them, reduce initial capex by US$62m (or 27.9%) to US$160m.

In addition to the Hawiah project itself, the Hawiah work programme will also incorporate the previously announced works that will start at the nearby Al Godeyer licence, which was granted to KEFI's 30% owned Saudi associate, G&M, in December 2021. Scout drilling for a large stockwork, or 'feeder', zone to the massive sulphides already identified (which would represent a separate, and probably much larger-scale, target than the existing Hawiah resource) is already underway. Note that there is a possibility of a maiden resource being announced at Al Godeyer later this year:

**Exhibit 8: Al Godeyer location with respect to Hawiah**




Source: KEFI Minerals, G&M

## Hawiah context and analogues

Albeit Hawiah is at an earlier stage of development than the following two examples, they nevertheless represent two analogues as to what it could become in terms of its value in the future, given time and investment:

### Atalaya

Atalaya Mining (formerly EMED Mining) is an AIM- and TSX-listed mining and development company that produces copper concentrates and silver by-product at its wholly owned Proyecto Rio Tinto site in south-west Spain and is seeking to become a leading multi-asset copper producer in Europe. In addition, it has a phased earn-in agreement to acquire up to 80% ownership of Proyecto Touro, a brownfield copper project in the north-west of Spain that is at the permitting stage. Production in FY20, FY21 and FY22e was a steady-state c 54–56kt copper and attributable resources amount to 2.6Mt Cu or 4.4Mt CuE. As such, Atalaya's current market capitalisation of US$679m equates to US$12,350 per annual tonne of steady-state production, US$261/t in-situ copper resource and US$154/t in-situ CuE resource.

Applied to Hawiah, these valuations imply a project valuation of US$187m (production), US$58m (copper resource) and US$66m (copper equivalent resource) – of which KEFI's attributable share would be 30%.

### AMAK (Al Masane Al Kobra Mining Co)

For the purposes of its IPO (which was reported to be 73.6x over-subscribed), AMAK (which operates the Al Masane mine – see above) recently priced its equity at 63 Saudi riyals per share, giving the company a valuation of US$1,109m for an in-situ resource of 86kt Cu and 293kt CuE – or the equivalent of US$12,932 per tonne of in-situ copper resource and US$3,781 per tonne of in-situ copper equivalent resource.

Applied to Hawiah, these valuations would imply a project valuation of US$2,884m (based on its copper resource) or US$1,611m (based on its copper equivalent resource) – of which KEFI's attributable share would, again, be 30%.

Note that these valuations for Hawiah, based on both Atalaya and AMAK, may be directly compared with the post-tax NPVs calculated in Exhibits 6 and 7, above. AMAK's resource multiples are unquestionably high within the global context – if not the highest – and may possibly be discounting future exploration success, among other things (see the copper section of our report Gold stars and black holes, published in January 2019). Nevertheless, given that Al Masane is an analogue to Hawiah geologically, technically and commercially, it is perhaps no surprise that KEFI management has indicated that it will investigate the possibility of a dual listing in Saudi Arabia, where the investor attitude is described by management as being one of 'great pride' towards mining and where KEFI management describes being lauded as being an early mover in the sector.

# Tulu Kapi

## Mine schedule and opex

In preparing for contract execution and estimating contracted costs, KEFI has updated detailed mine engineering and planning for the bulk mining (>90%) and also for the selective mining (<10%) of its ore and waste, which has been built into contractually detailed schedules with its newly appointed mining contractor, Corica (the largest in Africa). KEFI has focused intensively on this area, not only to reliably measure average grade, but also to manage grade variability during operations, based on tightly defined reserves derived from the wireframing of the entire ore system. Comparison between KEFI's current plans and those at the time of our last Outlook note (see On the cusp, published in July 2021) show very little difference, other than timings, with commissioning now expected at end-2023 with ramp-up to full production in 2024 and the life of processing operations therefore continuing into 2032 (cf 2030 previously) and updated costings.

**Exhibit 9: Updated Tulu Kapi mine plan and cost assumptions**

| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
|---|---|---|---|---|---|---|---|---|---|
| **Current** | | | | | | | | | |
| Waste (kt) | | | | | 6,450 | 18,473 | 19,967 | 20,193 | 19,997 |
| Stripping ratio | | | | | 5.8 | 5.0 | 9.5 | 11.0 | 9.8 |
| Ore processed (kt) | | | | | 534 | 2,126 | 2,120 | 2,097 | 2,042 |
| Grade (g/t) | | | | | 1.87 | 2.67 | 2.08 | 1.95 | 2.27 |
| Contained gold (koz) | | | | | 32.2 | 182.4 | 142.1 | 131.5 | 148.7 |
| Recovery (%) | | | | | 54.92 | 94.88 | 91.94 | 91.45 | 93.27 |
| Recovered gold (koz) | | | | | 17.7 | 173.1 | 130.6 | 120.2 | 138.7 |
| **Operating costs (US$/t processed unless otherwise indicated)** | | | | | | | | | |
| Mining (US$/t mined)* | | | | | 3.00 | 3.21 | 3.22 | 3.28 | 3.24 |
| Milling (oxide, US$/t) | | | | | 9.68 | 9.68 | 9.68 | 9.68 | 9.68 |
| Milling (fresh ore, US$/t) | | | | | 8.26 | 8.26 | 8.26 | 8.26 | 8.26 |
| Milling (hard ore, US$/t) | | | | | 10.09 | 10.09 | 10.09 | 10.09 | 10.09 |
| Total (US$/t) | | | | | 57.39 | 47.94 | 47.79 | 48.94 | 50.06 |
| Gold price (US$/oz) | | | | | 1,681 | 1,617 | 1,554 | 1,524 | 1,524 |
| Sustaining capex (US$000s) | | | | | 5,175 | 7,773 | 2,069 | 3,127 | 3,236 |
| **Previous**** | | | | | | | | | |
| Waste (kt) | | | 1,647 | 18,552 | 19,540 | 20,478 | 19,640 | 18,577 | 11,569 |
| Stripping ratio | | | 4.7 | 5.1 | 7.6 | 13.2 | 8.3 | 9.2 | 6.2 |
| Ore processed (kt) | | | 0 | 2,126 | 2,120 | 2,103 | 2,080 | 1,972 | 1,927 |
| Grade (g/t) | | | | 2.54 | 2.31 | 1.96 | 2.43 | 2.10 | 2.14 |
| Contained gold (koz) | | | 0.0 | 173.9 | 157.4 | 132.6 | 162.6 | 133.3 | 132.8 |
| Recovery (%) | | | | 94.79 | 93.00 | 91.36 | 93.81 | 92.02 | 92.07 |
| Recovered gold (koz) | | | 0.0 | 152.5 | 146.4 | 121.1 | 152.6 | 122.7 | 122.3 |
| **Operating costs (US$/t processed unless otherwise indicated)** | | | | | | | | | |
| Mining (US$/t mined)* | | | | 3.97 | 3.86 | 3.54 | 3.47 | 3.55 | 4.25 |
| Milling (oxide, US$/t) | | | | 9.68 | 9.68 | 9.68 | 9.68 | 9.68 | 9.68 |
| Milling (fresh ore, US$/t) | | | | 8.26 | 8.26 | 8.26 | 8.26 | 8.26 | 8.26 |
| Milling (hard ore, US$/t) | | | | 10.09 | 10.09 | 10.09 | 10.09 | 10.09 | 10.09 |
| Total (US$/t) | | | | 55.77 | 54.32 | 51.31 | 51.19 | 52.78 | 45.70 |
| Gold price (US$/oz) | | | 1,819 | 1,749 | 1,681 | 1,617 | 1,554 | 1,524 | 1,524 |
| Sustaining capex (US$000s) | | | | 11,761 | 5,039 | 2,436 | 3,636 | 1,769 | 1,773 |

Source: KEFI Gold and Copper, Edison Investment Research. Note: *Includes waste. **See our note On the cusp, published on 6 July 2021.

As per KEFI's update of November 2017, the proposed mining method and equipment specification are considered straightforward and technically sound by the lenders' independent technical expert. In this context, it is significant that less than 10% of the total material movement is categorised as 'selective' under the draft mining contract specifications, indicating that the mining methods to be used are generally very standardised.

With respect to costs, we estimate that unit mining costs have declined by an average of 6.7% over the course of the life of the mine (in US dollar terms) relative to our prior assumptions, while milling costs have remained unchanged, not least owing to the 18.0% decline in the value of the Ethiopian birr versus the US dollar since May last year.

In the meantime, our estimate of sustaining capital costs has similarly decreased by 6.6% over the life of the mine. Additional costs include a 7% government mining royalty, US$14.0m in life-of-mine offsite costs (cf US$8.7m previously to reflect the costs of off-take financing) and a US$14.5m provision for closure costs (cf US$11.2m previously). Onsite general and administrative costs are forecast to be US$8.6m pa during full mining and processing operations and US$4.3m pa while reprocessing stockpiles (unchanged). Head office costs are assumed to amount to £1.0m pa (unchanged). A carried-forward tax loss of US$60m (unchanged) has also been applied to future pre-tax profits before tax is payable.

## Capex

Excluding any positive cash-flows during the ramp up phase of development (which KEFI estimates could amount to c US$15m), our capex expectations in March 2022 have increased by 25.3% relative to those at the time of our last note in July 2021, with most of the increase (in absolute terms) attributable to the capital costs associated with the processing plant – in common with much of the industry – and funding costs:

**Exhibit 10: Tulu Kapi estimated initial capex evolution, July 2017 to November 2021**

| (US$m unless otherwise indicated) | 2017 KEFI plan | Final project models | May 2019 estimates | June 2021 estimates | November 2021 estimates | Variation (%) | Variation (US$m) |
|---|---|---|---|---|---|---|---|
| | July 2017 | April 2018 | May 2019 | June 2021 | November 2021 | November 2021 cf June 2019 | November 2021 cf June 2019 |
| Mining | 15.8 | 28.6 | 28.6 | 26.7 | 29.4 | +10.1 | +2.7 |
| Processing | 75.9 | 100.1 | 100.1 | 111.8 | 140.0 | +25.2 | +28.2 |
| Infrastructure | 15.7 | 15.7 | 15.7 | 20.0 | 20.0 | u/c | +0.0 |
| Tailings | 18.7 | 14.9 | 14.9 | 32.3 | 10.8 | -66.6 | -21.5 |
| Indirect | 1.8 | 0.0 | 0.0 | 1.8 | 1.8 | u/c | +0.0 |
| Owner's costs | 13.7 | 14.7 | 14.7 | 18.5 | 24.1 | +30.3 | +5.6 |
| Community relocation etc | 10.0 | 13.5 | 13.5 | 23.0 | 25.3 | +10.0 | +2.3 |
| Environmental management | 1.1 | 1.3 | 1.3 | 1.5 | 1.1 | -26.7 | -0.4 |
| Further contingency | 3.3 | 12.7 | 3.3 | 0.0 | 0.0 | u/c | +0.0 |
| Other | (15.7) | (20.7) | (15.0) | (16.2) | 3.6 | +122.2 | +19.8 |
| Additional funding-related costs | 15.6 | 0.0 | 0.0 | 0.0 | 0.0 | u/c | +0.0 |
| **Subtotal** | **155.8** | **180.7** | **177.1** | **219.4** | **256.1** | **+16.7** | **+36.7** |
| Working capital | 4.0 | 7.1 | 3.4 | 2.7 | (2.3) | -185.2 | -5.0 |
| Additional funds required for project funding | 33.0 | 33.9 | 14.2 | *6.1 | *30.3 | +296.7 | +24.2 |
| Cash buffer and other | 0.0 | 17.7 | 0.0 | 0.0 | 1.9 | N/A | +1.9 |
| **Totals** | **192.8** | **239.4** | **194.7** | **228.2** | **286.0** | **+25.3** | **+57.8** |
| Assumed throughput rate (Mtpa) | 1.7 | 1.9–2.1 | 1.9–2.1 | 1.9–2.1 | 1.9-2.1 | u/c | u/c |
| **Capital intensity (US$ per annual tonne)** | **113.41** | **119.70** | **97.35** | **114.10** | **143.00** | **+25.3** | **+28.90** |

Source: Edison Investment Research, KEFI Gold and Copper. Note: *Lenders' upfront fees and other financing costs including pre-production interest.

On the basis of these updated estimates, pre-production capex of US$256.1m (excluding financial items) equates to US$1,983 per annual average ounce of gold production at full capacity (cf US$1,640/oz previously).

## Funding mix

### Tulu Kapi

KEFI's approach to its funding requirements has been consistent in seeking to share risk with contractors and to minimise dilution. During 2014 and 2015, it revised its inherited definitive feasibility study (DFS) as a precursor to opening project construction and mining to international tender, with the specific intent of reducing upfront capex by introducing contract mining. Since then, it has introduced project-level equity (eg the government of Ethiopia and a consortium of Ethiopian investors) as well as senior secured debt provided by banks that are already working in Ethiopia, committed to the country and familiar with local market conditions and many of Tulu Kapi's stakeholders. In this case, the adoption of senior secured debt is reckoned to be more compatible with Tulu Kapi's consortium of financiers than other forms of finance. It is also anticipated to result in material savings in the cost of debt servicing, administration and other charges, especially during the project development and start-up period. As such, the development capital requirement of KEFI's Ethiopian subsidiary is planned to be financed largely at the project level, as set out in the company's guidance. The same approach has also been agreed with KEFI's 70% partner (the Al Rashid family office – a Fortune 100 family) at its Saudi operating company, G&M.

Including all exploration, corporate funding and financial items, KEFI's management has indicated the following capital requirements over the course of the next five years for the development of all three of its projects and the net amount to be subscribed in future for all three (including a US$15m cost overrun facility at Tulu Kapi), as follows:

**Exhibit 11: Tulu Kapi sources of funding**

| Item | Previous (July 2021)* | | Current | | | | |
|---|---|---|---|---|---|---|---|
| | US$m | £m | US$m | Change (%) | Change (US$m) | £m | Percent of total (%) |
| Senior secured debt | 140.0 | 101.0 | 140.0 | u/c | u/c | 106.6 | 46.4 |
| Subordinated debt linked to offtake rights | 15.0 | 10.8 | 45.0 | +200.0 | +30.0 | 34.2 | 14.9 |
| Ethiopian government participation at project level | 20.0 | 14.4 | 29.0 | +45.0 | +9.0 | 22.1 | 9.6 |
| Other project level equity | 5.0 | 3.6 | 10.0 | +100.0 | +5.0 | 7.6 | 3.3 |
| Subordinated loan convertible into KEFI equity after three years | 45.0 | 32.5 | 20.0 | -55.6 | -25.0 | 15.2 | 6.6 |
| Contractor charges convertible into KEFI equity after two years | 14.0 | 10.1 | 7.0 | -50.0 | -7.0 | 5.3 | 2.3 |
| Convertible note | | | 20.0 | N/A | +20.0 | 15.2 | 6.6 |
| Cost overrun facility | | | 15.0 | N/A | +15.0 | 11.4 | 5.0 |
| **Sub-total** | **239.0** | **172.4** | **286.0** | **+19.7** | **+47.0** | **217.6** | **94.7** |
| Parent company level equity | 11.0 | 7.9 | 7.0 | -36.4 | -4.0 | 5.3 | 2.3 |
| Pre-commercial production internal cash generation | | | 9.0 | N/A | +9.0 | 6.8 | 3.0 |
| **Total** | **250.0** | **180.3** | **302.0** | **+20.8** | **+52.0** | **229.8** | **100.0** |

Source: KEFI Gold and Copper, Edison Investment Research. Note: US$1.3139/£ (cf *US$1.3865/£ previously); totals may not add up owing to rounding.

Of particular note is the US$30m increase in the amount of funding from subordinated debt linked to offtake rights and the US$14.0m increase in the amount of funding being sourced via equity at the project level, which is now expected to leave KEFI owning a c 70% attributable interest in the project (cf approximately 75–80% previously). Funding via three items convertible into KEFI equity remain, albeit at a lower aggregate level of US$47.0m (cf US$59.0m previously). In the first two cases (ie the subordinated loan convertible after three years and the contractor charges convertible after two years), conversion is at KEFI's discretion at the price of KEFI's equity at the time of conversion, rather than at a pre-arranged price or a discount (NB the consequences of this are considered in the 'Valuation' and 'Sensitivities' sections of the note, below).

Otherwise, the government's policy directive requiring a maximum 50% debt gearing (defined as debt/[debt+equity]) for new projects has been waived in the case of Tulu Kapi, which has prior approval to expand the debt portion of its funding requirement to 70% of the total. In addition, clarification received from the regulator (the National Bank of Ethiopia) indicates that historical exploration spend on the project of c US$70m will be deemed to contribute towards equity for the purposes of this calculation.

## Group

KEFI's partner in Saudi Arabia, which funds 70% of all equity requirements, is the Al Rashid family – one of the world's wealthiest families. At the same time, the Saudi sovereign wealth fund's Saudi Investment Development Fund has publicly stated its priority to provide up to 75% project debt for new mine developments. Accordingly, KEFI's equity share of the development requirements for Hawiah and Jibal Qutman should be just 7.5% (30% of 25%) of combined capital expenditure of both of US$199m (US$160m plus US$39m) – ie just US$14.9m – to be funded after Tulu Kapi starts up. Note that Tulu Kapi is projected (by KEFI) to accumulate a cash balance of US$90m (KEFI's share after expedited debt repayments at today's gold prices) in the first two years of operation. Assuming that initial capex at Hawiah can be reduced to US$160m (see page 11), Edison's estimate of KEFI group's funding requirements, and their satisfaction, is shown in the table below:

**Exhibit 12: KEFI group funding requirement and financing assumptions, by project (US$m)**

| Project | Tulu Kapi | Jibal Qutman | Hawiah | Total |
|---|---|---|---|---|
| **Start year** | **2022** | **2024** | **2025** | |
| Funding requirement | 301 | 39 | 160 | 500 |
| Less senior debt | 140 | 29 | 120 | 289 |
| **Equity risk capital requirement** | **161** | **10** | **40** | **211** |
| Share subscriptions at project level | 38 | 7 | 28 | 73 |
| Off-take linked mezzanine finance | 45 | 0 | 0 | 45 |
| Cost overrun facility | 15 | 0 | 0 | 15 |
| **Project level capital** | **63** | **3** | **12** | **78** |
| Subordinated convertible into KEFI shares (Year 3) | 20 | 0 | 0 | 20 |
| Mine capex paid in KEFI shares in Year 2 | 7 | 0 | 0 | 7 |
| Budgeted internal cash generation | 9 | 0 | 12 | 21 |
| KEFI convertible note issue | 20 | 0 | 0 | 20 |
| KEFI equity | 7 | 3 | 0 | 10 |
| **Balance** | **0** | **0** | **0** | **0** |

Source: KEFI Minerals, Edison Investment Research.

For the purposes of our valuation (below) therefore, Edison has assumed that KEFI will raise US$10m in top company level equity only, plus a further US$2m for interim exploration purposes in FY22. In reality however, US$3m of this US$12m assumed equity raise (relating to Jibal Qutman) could be deferred until FY24 with a corresponding reduction in associated dilution to the extent that KEFI's share price is higher than that currently prevailing.

# Valuation

## Company valuation based on project NPV

At a long-term gold price of US$1,830/oz , KEFI calculates an updated project value for Tulu Kapi (on a 70% basis) of £191m or US$258m at US$1.35/£ (see slide 6 of the company's 10 January 2022 presentation), which is consistent with the values that it calculated at gold prices of US$1,500/oz, US$1,591/oz and US$1,850/oz on slide 27 of the company's 1–2 December Mines and Money presentation (see below):

**Exhibit 13: KEFI project-based valuations of Tulu Kapi at varying gold prices (open pit only)**

| Gold price (US$/oz) | 1,500 | 1,591 | *1,830 | 1,850 |
|---|---|---|---|---|
| **Current** | | | | |
| $NPV_8$ (100% basis) | | | | |
| US dollars (millions) | 250 | 303 | | 448 |
| Pounds sterling (millions) | 182 | 221 | | 327 |
| $NPV_8$ (70% basis) | | | | |
| US dollars (millions) | 175 | 212 | | 314 |
| Pounds sterling (millions) | 128 | 155 | 191 | 229 |
| $NPV_8$ (70% basis) | | | | |
| US cents per share (undiluted) | 5.95 | 7.22 | | 10.67 |
| Pence per share (undiluted) | 4.37 | 5.26 | 6.50 | 7.79 |

Source: KEFI Gold and Copper presentation (1–2 December), Edison Investment Research (per share data). Note: *7 February 2022 at US$1.35/£; otherwise US dollars converted into pounds sterling at a rate of US$1.37/£.

Observing the almost perfect, straight-line relationship between the gold price and the NPV calculated by KEFI, Edison calculates that a long-term gold price of US$1,524/oz (ie Edison's long-term, real gold price assumption) implies an $NPV_{8\%}$ for the Tulu Kapi project of US$185m or £137m (70% interest), or 6.30 US cents or 4.67p per share (on an undiluted basis).

In our report Gold stars and black holes, published in January 2019, we calculated a mean enterprise value for companies with projects at the DFS stage of development of 30.9% of project NPV, ranging up to 133.5%. At Edison's long-term gold price of US$1,524/oz, this alone would imply a pre-funding valuation for KEFI of 1.44p/share (based on Tulu Kapi alone) and a maximum pre-funding valuation of 6.23p/share.

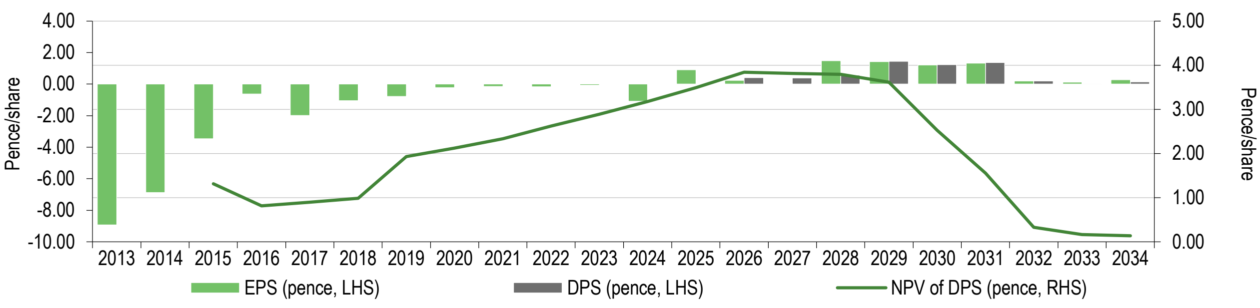
## Company valuation including corporate actions

In contrast to our previous valuations of KEFI, with greater clarity on the timing and funding of Jibal Qutman and Hawiah, we have now brought these two projects (accounted for as associates with a diluted KEFI interest of 30%) into our forecasts for the KEFI group as a whole. Note that, for the purposes of this exercise, we have assumed that Jibal Qutman is capable of producing 34,820oz per annum at a cash cost of US$672/oz over seven years for an initial capital outlay of US$39.0m.

In addition, it is worth noting KEFI's financing arrangements will leave it with zero (or near zero) debt at the parent company level, with group subsidiaries directly servicing any senior or mezzanine debt. In this case, even if the mezzanine debt goes in via a KEFI company, it will be on-lent back-to-back to the project company. As a result, dividends to KEFI shareholders from mid-FY25 should be possible. For these purposes, therefore, we have assumed KEFI will distribute 60% of group cash-flow in FY26 and FY27, of which 70% (less a 10% Ethiopian dividend withholding tax) will be attributable to KEFI shareholders. To this end, KEFI has secured a special exemption from exchange controls and has agreed a London clearing account controlled by its TKGM operating subsidiary. Note, there are no exchange controls in Saudi Arabia.

On the basis of our (unchanged) long-term gold price assumptions (see Exhibits 1 and 9), we calculate that all three projects are capable of generating a combined free cash flow to KEFI of c £78.6m per year for seven years, from 2025 to 2031 (inclusive). With average (maximum potential) dividends of 0.90p/share (cf 1.94p/share previously owing to additional dilution) for the six years from 2026 to 2031 inclusive (after deduction of a 30% minority interest), this implies a valuation for KEFI of 2.62p/share (cf 4.35p/share previously) when discounted back to FY22 at a rate of 10% per year. This valuation then rises to a maximum of 3.84p/share in FY26 on the cusp of KEFI's maiden dividend:

**Exhibit 14: Edison estimate of life of mine KEFI EPS and maximum potential DPS (pence/share), FY13–34e**




Source: Edison Investment Research

Note that KEFI's peak earnings valuation of 3.80p/share in FY28 would put it on a P/E ratio of no more than 2.5x in that year. In the meantime, we estimate that an investment in KEFI shares on 1 January 2022 at a price of 0.761p would generate an internal rate of return for investors of 28.3% over the next 13 years to 2034 (fully diluted) in sterling terms. To this may then be added at least a further 1.21p/share in value for Guji-Komto (fully diluted, attributable at a long-term gold price of US$1,524/oz – see On the cusp, published in July 2021).

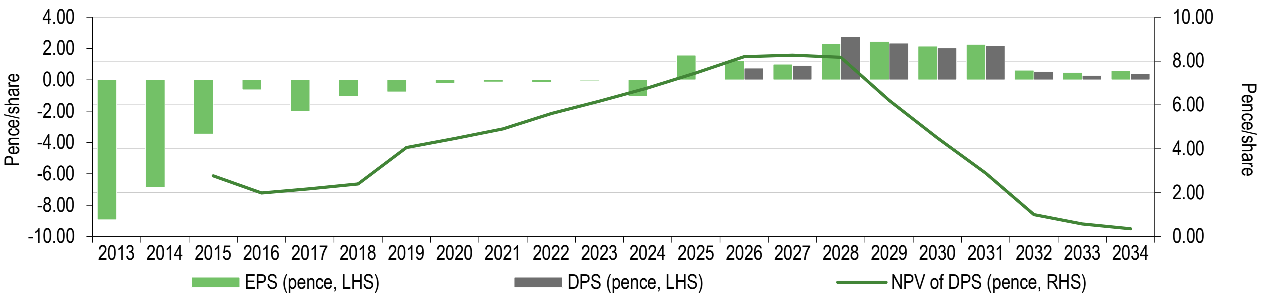
# Sensitivities

Our base case discounted dividend flow valuation of 2.62p is inherently dependent on our gold price assumptions, cash costs, the discount rate, the price at which a future assumed

US$12.0m/£9.1m equity raise is conducted (currently assumed to be the prevailing share price in the 'base case' valuation) and the prices at which up to US$47m in charges and loans (see text immediately below Exhibit 11) are converted (or not) into equity in two to three years' time.

Quantitatively, KEFI's most significant valuation sensitivity is towards commodity prices. Whereas our valuation is 2.62p at Edison's long-term prices (see Exhibit 5), it rises by 113.7%, to 5.60p/share, at currently prevailing metals' prices. Moreover, this 5.60p/share valuation itself rises to a peak valuation of 8.27p/share in FY27, as shown in the graph below (directly comparable to Exhibit 14):

**Exhibit 15: KEFI life of mine EPS and maximum potential DPS (pence/share) at spot metals' prices, FY13–34e**




Source: Edison Investment Research. Note: See Exhibit 5 for the prevailing spot prices.

Our valuation is also dependent on the discount rate applied to the (maximum potential) stream of dividends payable to KEFI's shareholders to the following extent:

**Exhibit 16: Discounted dividend valuation sensitivity to discount rate (pence/share)**

| Discount rate (%) | 0% | 5% | 10% | 15% | 20% | 25% | 30% |
|---|---|---|---|---|---|---|---|
| Valuation (pence) | 5.82 | 3.86 | **2.62** | 1.83 | 1.30 | 0.94 | 0.69 |

Source: Edison Investment Research

Readers should note that these results are consistent with our calculation of an internal rate of return of 28.3% over 13 years in sterling terms for investors buying KEFI shares at a price of 0.761p on 1 January 2022 (under Exhibit 14, above). At prevailing metals' prices however, this IRR increases to 42.7%.

With most of KEFI's equity having already been raised however, its valuation sensitivity to the price at which future equity is likely to be raised is relatively modest:

**Exhibit 17: Discounted dividend valuation sensitivity to future equity raising price (pence)**

| Price (pence) | 0.500 | 0.631 | 0.700 | 0.761 | 0.800 | 0.900 | 1.000 | 1.100 | 1.200 | 1.300 | 1.600 | 3.390 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Valuation (pence/share) | 2.28 | 2.48 | 2.56 | **2.62** | 2.66 | 2.75 | 2.82 | 2.88 | 2.94 | 2.98 | 3.10 | 3.39 |

Source: Edison Investment Research

Finally, if we assume that US$27m in charges and loans (out of a total of US$47m) are converted into equity at Edison's valuation of KEFI's shares in two to three years' time (see Exhibit 11), this would result in a valuation of 2.46p/share (note that these charges and loans are assumed in our 'base case' scenario to be retained on KEFI's balance sheet as debt). The terms of the remaining US$20m in the form of a convertible note (see Exhibit 11) are as yet unknown and therefore, by default, these are also retained in Edison's financial model of KEFI effectively as debt).

# Financials

KEFI had £1.3m in net debt on its balance sheet as at 30 June 2021 (cf £1.3m in net cash as at 31 December 2020, £2.1m in net cash as at 30 June 2020 and £0.8m in net debt as at 31 December 2019), after £2.8m in operating and investing cash outflows before working capital (cf £6.4m in

FY20, £5.3m in FY19, £6.9m in FY18 and £6.2m in FY17) and after having raised £0.3m in equity over the course of the prior six months. Since June 2021, KEFI has raised an additional £6.4m in equity and we estimate that it will raise a further US$12.0m/£9.1m (which may be 69% achieved by the exercising of the warrants issued in December and January over the next two years at a price of 1.6p per share cf the currently prevailing price of 0.761p/share – hence the exercise of such warrants is not assured) in order to fund the development of both Tulu Kapi and Jibal Qutman (NB Hawiah is assumed to be funded from internal cash generation).

As stated previously, KEFI now plans to finance its estimated US$301.0m capex funding requirement for Tulu Kapi principally via debt of US$200m, project-level equity of US$39m (excluding c US$70m in equity already invested), debt convertible into equity of US$47m and parent company level equity of US$16m (of which US$9m is in the form of pre-commercial production internal cash generation). On this basis, we forecast a maximum net debt funding requirement overall of £188.1m or US$247.2m in FY24 (cf £142.0m, or US$196.8m in FY22 previously). Obviously, raising funds of this order of magnitude is not without risk for a company with a market capitalisation of £22m and a project that is based in Ethiopia. However, we believe that this risk is mitigated by the fact that a preliminary term sheet regarding the terms of KEFI's bank loan is already reported to have been signed and is subject now only to credit approval by the co-lender (credit approval from the lead bank having already been secured, to our understanding). Hence, this form of funding is considered to be more easily compatible with the project's consortium than a number of other alternatives. Hence, KEFI is expecting full finance close and drawdown in mid-2022.

**Exhibit 18: Financial summary**

| £'000s | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021e | 2022e | 2023e |
|---|---|---|---|---|---|---|---|---|---|---|---|
| December | IFRS | IFRS | IFRS | IFRS | IFRS | IFRS | IFRS | IFRS | IFRS | IFRS | IFRS |
| **PROFIT & LOSS** | | | | | | | | | | | |
| Revenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cost of Sales | (927) | (2,071) | (1,634) | (2,260) | (3,522) | (4,145) | (2,357) | (2,663) | (1,403) | (1,381) | (1,381) |
| Gross Profit | (927) | (2,071) | (1,634) | (2,260) | (3,522) | (4,145) | (2,357) | (2,663) | (1,403) | (1,381) | (1,381) |
| EBITDA | (927) | (2,071) | (1,634) | (2,260) | (3,522) | (4,145) | (2,357) | (2,663) | (1,403) | (1,381) | (1,381) |
| Operating Profit (before amort. and except.) | (927) | (2,189) | (1,724) | (2,315) | (3,546) | (4,155) | (2,367) | (2,706) | (1,438) | (1,416) | (1,416) |
| Intangible Amortisation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exceptionals | (442) | (379) | (428) | 1,944 | (2,359) | (180) | (1,465) | 174 | (200) | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Operating Profit | (1,369) | (2,568) | (2,152) | (371) | (5,905) | (4,335) | (3,832) | (2,532) | (1,638) | (1,416) | (1,416) |
| Net Interest | 4 | (413) | (319) | (136) | (75) | (459) | (1,150) | (100) | (409) | (6,842) | (2,290) |
| Profit Before Tax (norm) | (923) | (2,602) | (2,043) | (2,451) | (3,621) | (4,614) | (3,517) | (2,806) | (1,847) | (8,258) | (3,706) |
| Profit Before Tax (FRS 3) | (1,365) | (2,981) | (2,471) | (507) | (5,980) | (4,794) | (4,982) | (2,632) | (2,047) | (8,258) | (3,706) |
| Tax | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Profit After Tax (norm) | (923) | (2,602) | (2,043) | (2,451) | (3,621) | (4,614) | (3,517) | (2,806) | (1,847) | (8,258) | (3,706) |
| Profit After Tax (FRS 3) | (1,365) | (2,981) | (2,471) | (507) | (5,980) | (4,794) | (4,982) | (2,632) | (2,047) | (8,258) | (3,706) |
| Minority interests | 0 | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,477 | 1,112 |
| Net income (normalised) | (2,151) | (3,469) | (2,778) | (3,177) | (3,907) | (4,775) | (4,108) | (3,894) | (3,083) | (5,780) | (2,593) |
| Net income (FRS3) | (1,365) | (2,866) | (2,471) | (507) | (5,980) | (4,794) | (4,982) | (2,632) | (2,047) | (5,780) | (2,594) |
| Average Number of Shares Outstanding (m) | 29.0 | 56.0 | 92.8 | 194.9 | 315.3 | 476.1 | 719.0 | 1,663.2 | 2,352.6 | 3,353.3 | 4,139.3 |
| EPS - normalised (p) | (7.4) | (6.2) | (3.0) | (1.6) | (1.2) | (1.0) | (0.6) | (0.2) | (0.1) | (0.2) | (0.1) |
| EPS - normalised and fully diluted (p) | (7.4) | (6.2) | (3.0) | (1.5) | (1.1) | (0.9) | (0.5) | (0.2) | (0.1) | (0.1) | (0.1) |
| EPS - (IFRS) (p) | (4.7) | (5.1) | (2.7) | (0.3) | (1.9) | (1.0) | (0.7) | (0.2) | (0.1) | (0.2) | (0.1) |
| Dividend per share (p) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Gross Margin (%) | - | - | - | - | - | - | - | - | - | - | - |
| EBITDA Margin (%) | - | - | - | - | - | - | - | - | - | - | - |
| Operating Margin (before GW and except.) (%) | - | - | - | - | - | - | - | - | - | - | - |
| **BALANCE SHEET** | | | | | | | | | | | |
| Fixed Assets | 7,152 | 9,299 | 11,926 | 14,053 | 16,275 | 18,795 | 21,239 | 24,545 | 23,673 | 81,847 | 176,320 |
| Intangible Assets | 6,900 | 9,139 | 11,845 | 13,992 | 16,232 | 18,757 | 21,200 | 24,510 | 24,510 | 26,610 | 27,610 |
| Tangible Assets | 252 | 160 | 81 | 61 | 43 | 38 | 39 | 35 | 148 | 56,222 | 149,695 |
| Investments | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (985) | (985) | (985) |
| Current Assets | 4,014 | 1,061 | 1,012 | 3,561 | 1,047 | 284 | 1,454 | 1,817 | 1,359 | 847 | 848 |
| Stocks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Debtors | 655 | 335 | 358 | 3,056 | 94 | 115 | 1,234 | 448 | 224 | 226 | 227 |
| Cash | 3,279 | 640 | 562 | 410 | 466 | 88 | 150 | 1,315 | 514 | 0 | 0 |
| Other | 80 | 86 | 92 | 95 | 487 | 81 | 70 | 54 | 621 | 621 | 621 |
| Current Liabilities | (3,363) | (3,202) | (1,995) | (2,067) | (2,852) | (3,727) | (5,211) | (3,125) | (1,170) | (585) | 0 |
| Creditors | (3,363) | (3,202) | (1,995) | (2,067) | (2,852) | (3,112) | (4,247) | (3,125) | (1,170) | (585) | 0 |
| Short term borrowings | 0 | 0 | 0 | 0 | 0 | (615) | (964) | 0 | 0 | 0 | 0 |
| Long Term Liabilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (25,447) | (124,213) |
| Long term borrowings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (25,447) | (124,213) |
| Other long term liabilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net Assets | 7,803 | 7,158 | 10,943 | 15,547 | 14,470 | 15,352 | 17,482 | 23,237 | 23,862 | 56,662 | 52,956 |
| **CASH FLOW** | | | | | | | | | | | |
| Operating Cash Flow | (1,424) | (2,006) | (2,729) | (2,211) | (51) | (3,291) | (624) | (2,092) | (3,191) | (1,968) | (1,967) |
| Net Interest | 4 | (413) | (319) | (136) | (75) | 115 | (1,150) | (100) | (409) | (6,842) | (2,290) |
| Tax | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capex | (877) | (3,133) | (3,507) | (3,014) | (2,625) | (2,835) | (2,690) | (4,389) | (399) | (58,209) | (94,508) |
| Acquisitions/disposals | (1,083) | (750) | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Financing | 4,735 | 3,663 | 6,480 | 5,192 | 2,807 | 5,128 | 1,640 | 6,996 | 3,198 | 41,058 | 0 |
| Dividends | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net Cash Flow | 1,355 | (2,639) | (75) | (153) | 56 | (883) | (2,824) | 415 | (801) | (25,961) | (98,765) |
| Opening net debt/(cash) | (1,924) | (3,279) | (640) | (562) | (410) | (466) | 527 | 814 | (1,315) | (514) | 25,447 |
| HP finance leases initiated | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | (3) | 1 | 0 | (110) | 2,537 | 1,714 | 0 | 0 | 0 |
| Closing net debt/(cash) | (3,279) | (640) | (562) | (410) | (466) | 527 | 814 | (1,315) | (514) | 25,447 | 124,213 |

Source: company sources, Edison Investment Research

| Contact details | Revenue by geography |
|---|---|
| Wisdom Tower, 1st Floor,<br>2 Ayiou Pavlou and Kadmou Street,<br>Nicosia,<br>Cyprus 1105<br>+357 22 25 61 61<br>www.kefi-minerals.com | N/A |

**Management team**

| Executive chairman: Harry Anagnostaras-Adams | Head of Ethiopia projects: Eddy Solbrandt |
|---|---|
| Harry Anagnostaras-Adams qualified as a chartered accountant while working with PricewaterhouseCoopers and has an MBA from the Australian Graduate School of Management. He has overseen a number of business start-ups, both in the mining industry (eg KEFI and EMED Mining) and outside (eg Citicorp Capital Investors, Pilatus Capital and Cyprus-based Semarang Enterprises) in the roles, variously, of chairman, deputy chairman and managing director. | Eddy began his career in the mining industry in 1986 and has since worked in open cut and underground coal, gold and mineral sands mines in Australia, New Zealand, the US, Canada, Mexico, the UK, Ukraine, Russia, Kazakhstan, Indonesia, Thailand, South Africa, Mozambique and Namibia. He is also founder of GPR Dehler, an international management consultancy which specialises in productivity improvement for mining companies worldwide, especially in the areas of human resources development and performance improvement. |
| **NED & chair audit & finance committee: Mark Tyler** | **NED: Richard Robinson** |
| Mark has over 20 years of mining finance experience, having participated in mining equity investments at the IDC of South Africa and as the co-head of resources finance and subsequently a resources investment banker at Nedbank in London. He is currently resources adviser to Exotix Capital, an emerging markets investment bank and the London representative for Auramet International, an international precious metals financier. | Richard has over 40 years of experience in the gold, platinum, base metal and coal industries, of which over 20 years was spent at Gold Fields of South Africa where he had responsibility for gold, base metals and coal operations as well as exploration and group commercial activities. His experience also includes being managing director of Normandy LaSource, non-executive chairman of the private Swiss multinational Metalor Technologies International and Non-executive director of Recylex. |

| Principal shareholders | (%) |
|---|---|
| RAB Capital | 8.3 |
| Winchcombe Ventures | 5.1 |
| H. Anagnostaras-Adams Esq | 1.9 |
| J.E. Leach Esq. | 1.1 |
| Freetrade Nominees | 0.6 |
| Perenti International | 0.6 |

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